APPLICATION FOR UNITED STATES PATENT

OF

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AND

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FOR

TARGETED E-COMMERCE SYSTEM

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TO WHOM IT MAY CONCERN:

15   Be it known that we, PETER M. BLACK and ANTHONY BRYAN WATERS,

citizens of the United States of America, and residents of the County of Los Angeles,

State of California and County of Rockwall, State of Texas, respectively, have invented

certain new and useful improvements in TARGETED E-COMMERCE SYSTEM and

we do hereby declare the following to be a full, clear, and exact description of the

20   invention, as described and claimed in the following specification.

This application is a continuation-in-part of our application No. 09/630,227 filed 08/01/00 and our application No. 09/703006 filed 10/31/00.

Targeted E-Commerce System

Field of the Invention

5   The invention relates to providing a system for providing a list of related e-commerce products to any document appearing on a computer device.

Background of the Invention

The Internet delivers trillions of words to billions of screens. The Net contains an enormous amount of material. Systems exist which survey web sites to determine the

10   traffic (hits) that take place for a given web page. Some systems exist which will suggest products to a user based upon their selection of a particular web page or a particular topic. No system exists however, to analyze survey statistics to select and suggest e-commerce products that would be of interest to those persons selecting particular content and portions of that content, to suggest highly related products that can be

15   purchased by the user. This would be highly beneficial to create a market for those products to persons that are already recognized to be interested in a particular subject.

For example, while searching an article on basketball, various products could be suggested on the screen for purchase, such as sports supplies, sports clothing and books and magazines on the subject of basketball. If it could be determined that the searcher

20   was particularly interested in professional basketball, the products suggested could be narrowed to be more relevant to that interest.

Objects of the Invention

It is an object of this invention to determine the interests of users of the Internet and suggest e-commerce products for purchase, relevant to the user's interests.

It is a further object of the invention to provide a system to determine highly relevant products to suggest to internet users based upon their interest in or queries based upon any content, such as magazine articles, news stories or any other text.

Summary of the Invention

5   The targeted e-commerce system of this invention uses a product database and an automated keyword tagging system to determine products that are best suited for display on a given content page. As the content is being prepared for publishing on a web site, it is tagged with one or more preselected keywords either manually or using an automated tagging process as described in our parent applications on "Hotwording" and "Brilliant

10   Queries". These keywords are submitted as input to a product database which selects one or more products for display on the page. The products are displayed either as text entries, using titled thumbnails or other conventional techniques on product merchandising on electronic devices. The text entry, thumbnail or other method is essentially a link that leads to a product display page on the site or on a separate retail

15   site.

The product database contains fields that describe the products along with their associated keywords. These fields might include the internal product id, the product url, the product price, the product title, the sale price (if any), and the full product description.

Products are associated with one or more keywords which are manually or

20   automatically selected. An example of keywords associated with, for instance, "Basketball", would be "clothing" or "celebrity". All product keywords are listed in a product keyword table. Product selections are made by using the product keyword table to create a database match, or close match when multiple keywords are considered, with the keyword table from the content selection, to limit the product display to only

25   products associated with specific keywords or multiple keyword clusters.

Product selection can be done statically for simple publishing content or the

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product selection can be performed on a server dynamically, to make products instantly available for display on the web site.

With the static publishing model, the product selection is done at the time the content is submitted for publishing and the chosen products are embedded in the page prior to upload to the server. These pages can be reprocessed and uploaded to the server repeatedly as the product database changes.

The dynamic publishing model relies on a product database that is running live on the server and gateway interface technology to query the product database and generate product selection on a query by query basis. This model allows for a product selection that is instantly updated on every content page as the product database is updated. If the product database has been enhanced via the above-described system of metatagging, then the match can be undertaken via sophisticated statistical matching techniques. If the product database is maintained without such enhancement, but is capable of responding to Boolean ANDed queries, then the matching can be accomplished through the automated submission of Boolean ANDed queries derived from the metatagging process, as described in our "Brilliant Query" application No. 09/703006, filed 10/31/00.

Traffic survey data of web content may be done on several levels. These include:

1. Content selection, the general nature of the content.

2. Use of "Hotwording" as described in our parent application, which would provide data on both the content and keywording.

3. Use of a "Brilliant Query" as described in our parent application, which would provide data based on both a "hook" and a keyword.

4. Data from a targeted e-commerce site to which metatagging or keywords have been added with the methodologies described in this application, and its precursors.

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The data can be analyzed by researchers looking at the word frequency analysis of the content and keywords chosen and then choosing products that are relevant to the subject matter. Products can also be chosen by adding metatagging or keywording to an inventory of products, and matching the content keywording to the product keywording.

5   As discussed in our "Brilliant Query" application, more definitive results will be obtained if keyword clusters, such as a doublet (a two word combination) or a triplet (three word combination) are analyzed, as they are far more revealing than a single word or general content category.

There will be cases where the number of products displayed on a given page will
10   need to be limited. When the number of products matching the keywords for a given page exceeds this limit, there are one or more criteria for determining the products that are displayed. First, all products that are associated with all keywords are selected as a set. The product list is then ordered by one or more of the following optional criteria:

1) Date of product listing (how new is the product).

15   2) Product sale status (is there a special sale on the product?).

3) Product Price (more expensive or less expensive).

4) Keyword weighting (a product that matches the keyword that most appears in the content will be displayed before a product that matches a lower frequency keyword). The list is then limited to a prespecified number of products based on the site's design
20   preferences.

As stated in our parent application, Brilliant queries are a collection of one or more pairings of a hook and a keyword. For example, an article on Basketball might have the following Brilliant queries:

1.   Search for more information on BASKETBALL and CELEBRITY

25   2.   Search for more information on BASKETBALL and CLOTHING

3.   Search for more information on BASKETBALL and FASHION

4.   Search for more information on BASKETBALL and COMMERCE

The hook is BASKETBALL and the keywords are CELEBRITY, CLOTHING, FASHION and COMMERCE.

Metatagged keywords are simply a collection of words, generated automatically or manually, that are deemed to be indicative of the topic matter or one of the topics for a

5   given content selection. Metatagged keywords are determined by comparison of a pre-determined list of keywords to the text of the content selection. If the content selection contains one or more of the keywords, or an appropriate synonym, then that keyword is associated with that text body and potentially used for the Brilliant Query. Keywords may also be determined by statistical word frequency analysis of the text, with or without

10   manual selection and addition of synonyms.

Keywords are generated by automatic or manual statistical and empirical analysis of the body of content to be enhanced or a comparable body of content. The keyword list for a given content source is generated through the use of word frequency analysis, stopword removal and finally, manual selection using empirical testing of the results

15   generated by a given potential keyword. Based on experience, a solid keyword list usually runs between 250 and 1000 words and phrases which are chosen by the system designer.

Also, keywords can be manually tuned through the use of a thesaurus feature whereby a given keyword can be associated with one or more synonyms that would

20   indicate the use of the keyword whenever one or more of the synonyms appear in the body of text to be enhanced. This process is applied to both the content and the product database.

<u>Brief Description of the Drawings</u>

Fig. 1 is a depiction of a computer screen showing a body of text entitled,

25   "Atomic Bomb" with targeted e-commerce offers;

Fig. 2 is a depiction of a list of Brilliant Queries, revealing the keywords metatagged to the "Atomic Bomb" article;

Fig. 3 is a partial pre-selected product list, based on an Amazon product search on the phrase, 'Atomic Bomb';

5   Fig. 4 is a specific product merchandising page, revealing the keywords metatagged to this particular product; and

Fig. 5 is the reduced a list of the products that result from keyword matching.

Description of the Preferred Embodiments

10   Fig. 1 is a body of text comprising an Encyclopedia Electronica article entitled, "Atomic Bomb". Metatagged keywords associated with the article are shown in Fig. 2, as the second operand in each of the recommended "Brilliant Queries". Editorial judgment resulted in "Atomic Bomb" being the chosen as the "hook", the primary subject matter of the article, as indicated by it's choice as the title of the article by the

15   Encyclopedia editors.

Fig. 3 shows a general list of matching products across all catagories results from a search on "Atomic Bomb" on the www.amazon.com product search engine. Keywords metatagged to one of the products found in the Amazon search, after analysis of the product description text, are indicated in Fig. 4 (right side, Features sidebar). The

20   keywords metatagged to the original text can be matched to the keywords matatagged to the products, to provide a list of products which are highly relevant to the interests of the reader of the text (Fig. 5).

Thus, when the consumer/reader selects a particular article and a particular query

25   from the text, a list of products available for purchase appears on the screen, the products

being highly related to the query. Each of the products listed may contain a link to a retail purchase site.

Having thus described the invention,

We claim: